

AN

ESSAY

ON THE

THEORY AND ADVANCEMENT

OF

THOROUGH BASS.

BY

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STOKE-NEWINGTON.

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[Entered at Stationers Hall.]

JOHN LUTTING

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1. **M**USIC is composed of concords and discords.

Concords arise from the coincidence of the vibrations; but, when they never coincide, discords are produced. But the time of vibration of any string is $\sqrt{\frac{w \cdot l}{32 \cdot 2 \cdot t}}$ in seconds, where w , l , and t , are the weight, length, and tension, respectively; therefore the number of vibrations in a second is $\sqrt{\frac{32 \cdot 2 \cdot t}{w \cdot l}}$; hence in the same string and ten-

non they will be reciprocally as the length, &c.

2. Therefore the concords in an octave are unison, third, fourth, fifth, sixth, and replicate; the discords are the second and seventh therein.

For half a tone is $= ,9439$, therefore its square, which is $,8909$, must be a whole tone, and every unitic increase of the power adds half a tone; therefore the monorcordal length of an octave is $\frac{2}{1}$; that is, it vibrates twice as fast as the whole string or unison, &c.

SCHOLIUM.

The greatest error in a concord never exceeds* $\frac{1}{13}$ of a note, which is insensible. Unison and replicate are perfect, &c.

* Prop. 201, Emerf. Algeb.

3. The first physico-concord is compounded of unison, or replicate, third and fifth; this is called the perfect chord, as composed of the prime concords, and is marked $\frac{1}{2}$, $\frac{2}{3}$, &c. but in general no mark denotes the common chord.

If the bass be raised a third and fifth, and these new basses be compared with the common chord, the two other concords will be had, viz. the $\frac{2}{3}$ and $\frac{3}{4}$, which are no more than common chords to, and their fundamental basses are, the third and fifth below respectively.

Corollary. — Hence every physico-concord has two parts, between which there is a third.

Thus, in the common chord, counting from the bass, the parts are 1, 3, &c.

4. The first physico-discord is called the *seventh*; is composed of

1,

1, 3, 5, 7, and marked $\frac{7}{4}$, $\frac{7}{5}$, $\frac{7}{6}$, &c. Now this is the fundamental, for raising the bass 1, 2, 3, 4, 5, and 6, tones; and, comparing these new basses, (as before,) we have the discords $\frac{7}{4}$, $\frac{7}{5}$, $\frac{7}{6}$, $\frac{7}{8}$, $\frac{7}{9}$, and $\frac{7}{10}$, respectively; whose fundamental basses must evidently descend in the above order.

Corol. 1. — All discords are born from the perfect chord, and all harmony is therefore built upon it.

Corol. 2. — No chord will admit of more than four inversions: three at the minimum.

Corol. 3. — Hence every discord has two parts, between which there is a second.

Thus in $\frac{7}{4}$ the discordal parts are 2, 1, &c.

SCHO-

SCHOLIUM I.

There are also other discords derived from these, and used much in music, as the mixture of the third, fifth, and ninth, called the lesser ninth, &c. Some are irregular, or have no fundamental bass, as the $\frac{4}{3}$, &c. and all discords are prepared by, and resolved into, the nearest concords; but every common chord is a key, and therefore we must keep to true modulation.

SCHOLIUM II.

The fundamental basses may be thus found: take the least part of the two where the concord lies, or the greatest, if discord, from 9, and the greatest complement gives the fundamental bass required (taken below).

Thus

Thus in the $\frac{3}{4}$ (cor. ar. 3) the parts are 6 and 4, hence $9 - 4 = 5$.

And in the $\frac{2}{4}$ (cor. 3) the parts are 2 and 1, hence $9 - 2 = 7$; and so on.

5. Modulation is the passing from one key to another; and, when instant, is called a simple modulation; now every common chord is a key, and therefore the instant passings may be the third, fourth, fifth, and sixth, majors and minors, above or below; for an incre sixth is replicate of a decre third, &c.*

Corol. — Hence there can be no true succession of fourths, fifths, eighths, seconds, &c. preserving similar motion in the parts of a composition; thirds and sixths for the most part may; but, since nature is

* It is to be observed, that musicians begin reckoning with the note itself.

inconstant, or variable, dissimilar motions in general are the best.

SCHOLIUM.

There is a metaphysical method of thorough bass which I have found; but, since it is for the most part conjectural, I shall not here mention it (those that would desire to know it may consult me); for, mathematics throw all conjectures away.

I suppose the learner qualified in the principles of thorough bass, as this essay (entirely new) explains the theory, (never before attempted, or at least but very badly handled,) consequently is an advancement to the science; (which is very defective in the hands of our musicians;) the principles on which it is founded are well enough known to mathematicians,*

cians,* but omitted here as very intricate, and wholly depending on the higher branches of mathematics.

N. B. The author teaches every branch in the science of music both in the theory and practice, after new, concise, and easy, methods, from the strictest mathematic and physical principles, at his house in Church-Street, Stoke-Newington, or abroad, on moderate terms.

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* The constructions of all musical instruments entirely depend on mathematical principles, &c.

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